13 Dec 01

DEPARTMENT OF THE AIR FORCE
Aerospace Basic Course (AETC)
Maxwell Air Force Base, Alabama 36112

LESSON PLAN

A1370, INTRODUCTION TO AIRGAP

CONTENTS

RECORD OF CHANGES

CHANGE NUMBER	REMARKS
New Lesson	Supercedes ABC lesson 1270 dated 7 Aug 00
Change 1	Standardizes Air Component Commander nomenclature

SUMMARY OF CHANGES

EDUCATIONAL GOALS

A1000 Area Objective: Apply aerospace power capabilities and officership principles to warfighting.

A1300 Phase Objective: Comprehend how the Air Force Core Competencies enhance warfighting.

A1370 – INTRODUCTION TO AIRGAP

Activity Statement: Students will participate in the AIRGAP tutorial.

Purpose of the Activity:

- To provide an overview of the AIRGAP simulation
- To demonstrate how subgroups of the Flight will have to work together to execute during AIRGAP
- To demonstrate how to interpret information provided on the screen during the AIRGAP Exercise
- To provide a basic understanding of AIRGAP so students may prepare for the Exercise

Lesson Description: This lesson provides an introduction to the interactive, hands-on, wargame simulation called AIRGAP. The AIRGAP simulation tool will be used during the AIRGAP lesson to reinforce USAF core competencies.

Prerequisite(s): None

Preparation: Read the AIRGAP Handbook Ver 3.5 located in the flight room.

Optional: None

Rationale/Linkage: This lesson provides the students with the necessary background material to properly use the AIRGAP simulation tool. In a future lesson, students will use the skills they have learned here to compete against another flight using the AIRGAP wargame.

INSTRUCTIONAL PLAN

1. **TITLE AND LENGTH OF LESSON:** INTRODUCTION TO AIRGAP, (2:00)

2. **RELATION TO OTHER INSTRUCTION:** The information taught during this lesson lays the groundwork for operating the AIRGAP simulation tool in 1370, AIRGAP.

3. **GENERAL METHOD OF INSTRUCTION:**

   a. Presentation Method: Exercise

   b. Time Outline:

Segment Time	Total Time	Description
0:05	(0:05)	Introduction
0:05	(0:10)	MP I: Overview
0:05	(0:15)	MP II: Tutorial Setup
0:20	(0:35)	MP III: Tutorial Execution
0:10	(0:45)	MP IV: Q & A Session
0:05	(0:50)	Break
1:00	(1:50)	MP V: Flight vs. CPU Simulation
0:10	(2:00)	Conclusion

   c. Instructor Preparation:

   - Review AIRGAP Handbook Ver 3.5
   - Review AIRGAP Instructor Information (Dash 1)
   - Review AIRGAP Computer Setup Information
   - Become familiar with all four AIRGAP Tutorials (LOG, ISR, DCA, OCA) and the AIRGAP Flight versus Computer Simulations.
   - Review this lesson plan

   d. Instructor Aids/Handouts:

   - A1370-HO-1, AIRGAP Force Flow document, 5 copies
   - A1370-HO-2, AIRGAP Handbook Ver 3.5

- A1370-Atch1-1 Computer setup instructions.
- A1370-Atch2-1 Tutorial Learning Objectives

e. Student Preparation:

- Review AIRGAP Handbook Ver 3.5.

f. Strategy: The AIRGAP tutorial maps drive this lesson. The instructor will begin the lesson with a quick overview of why we are using AIRGAP as an educational tool, and will then setup the room to begin the autonomous self-guided tutorials. During the execution of the tutorials, the instructor will roam around the classroom and assist anyone who has questions or seems to be having difficulty with the tutorial. At the conclusion of the tutorials the instructor will answer any questions the students have. If there are no questions, the instructor will have a few to ask the class. A quick break will then allow the instructor to set up the computers for the AIRGAP versus CPU simulation. The Team versus CPU simulation allows the students their first opportunity to work together as a team while attempting to attain the AIRGAP objectives. The computer opponent they are fighting against is a very worthy opponent and will test their skill. During the simulation, the students can pause the simulation to ask the instructor for assistance. Stop the simulation ten minutes prior to the end of class for concluding remarks and final questions.

g. References: N/A

4. DETAILS OF INSTRUCTION:

a. Introduction: 0:05 (0:05)

1) //Attention//

How many of you have played any type of video game? Card or board game? It may surprise you to know that if you answered yes to any of these questions, you have been using tools not much different then those our leaders use when they conduct their wargame simulations.

2) //Motivation//

Today we will be introducing you to the computerized wargaming environment developed specifically for Aerospace Basic Course students. AIRGAP will give you a hand's-on opportunity to focus on using the core competencies you have been studying throughout ABC. You will use AIRGAP to try out your war-winning strategies in a non-threatening environment where nothing will die, except maybe a few electrons. This is exactly what our leaders do, using different wargames and simulations.

3) //Overview//

During this lesson, I will introduce you to the AIRGAP wargaming tool. To prepare you to successfully execute an air campaign using the tool, we will accomplish the following:

- Discuss the AIRGAP campaign objectives
- Familiarize you with your particular role in the campaign
- Familiarize you with how to fulfill your particular role using the AIRGAP wargaming tool
- Have you work as a team to achieve game objectives against a computer opponent.
- Explain your out of class responsibilities.

b. MP I: AIRGAP Overview: 0:05 (0:10)

During the course of this lesson and the upcoming AIRGAP lesson, you will get a chance to start putting some of the doctrinal and conceptual knowledge you have

learned, through your commissioning programs and this course, to good use. This stressful, real-time strategy simulation is based upon the commercially available computer game StarCraft® ("Blizzard Entertainment, StarCraft and Battle.net are trademarks or registered trademarks and the StarCraft product and characters are the copyrighted work of Blizzard Entertainment, Inc., and are used with permission." It gives you the opportunity to simulate how focused and synergistic use of the Air Force Core Competencies can be used to successfully win an air campaign. It can also show just the opposite... try not to let that happen!

You will be competing as a four-computer team against a team from an opposing squadron. Each computer will simulate a different air role within the campaign. These roles are:

Logistics (LOG) Commander (3 students):

- Directs logistic units to build logistics facilities, repair damaged units and buildings, and transport aircraft fuel
- Directs initial Forward Operating Base (FOB) setup actions
- Coordinates with the other commanders for any support needed

Information, Surveillance, and Reconnaissance (ISR) Commander: (3 Students)

- Directs ISR units to perform surveillance and reconnaissance of the theater
- Directs ISR units to perform stealth detection within the theater
- Tasks Special Operations Units to perform operations deep within enemy territory

Defensive Counterair (DCA) Commander: (3 Students)

- Directs DCA units to protect all bases and assets within the theater
- Directs DCA Logistic Troops to build missile defense batteries and Sector Operations Centers
- Pays particular attention to:
    - High Value Assets (C-17, AWACS, B-52)
    - Forward Operating Locations
- Coordinates with the other commanders for any support needed

Offensive Counterair (OCA) Commander: (3 Students)

- Directs OCA units to attack enemy buildings and units
- Performs DCA taskings, if requested by the Air Component Commander
- Coordinates with the other commanders for any support needed

Each of the above roles is represented during AIRGAP by a different color. This is similar to IFF (Identify Friendly or Foe) used on military aircraft. It allows you to identify your own items, your other team mates items, and of course enemy items. Here is a breakdown of the colors used:

(Write this chart on the board)

	Freedomland	**Republica**
Logistics	Orange	Blue
ISR	Brown	White
DCA	Teal	Yellow
OCA	Red	Purple

The final role in the campaign is that of the Air Component Commander. This single person is responsible for

- Coordinating all actions in the theater to carry out the team strategy and meet the campaign objectives.
- Developing the campaign plan prior to the start of hostilities, includes Offensive, Defensive, ISR, Support, and Forward Operating Base plans.
- Working with each subordinate commander to ensure all tasks are understood and carried out successfully.

At this time, I would like the group to decide who would like to hold what positions during the AIRGAP simulation.

*{**Instructor Notes:** Wait until the group has decided on how to divide the flight. If you have 12 students, remove one person from the ISR team, if 11 students, remove one person from the LOG team.}*

Now, each commander, with the exception of the Air Component Commander, will go through a separate tutorial designed to instruct him/her in the use of the available theater assets. Joint Forces Commander needs to monitor a little of all the tutorials to become familiar with what each commander brings to the fight.

Your goal during your tutorial is to familiarize yourself as best possible with using the AIRGAP tool to control the units under your command.

I will give you your AIRGAP campaign objectives prior to the Flight versus CPU exercise later in this lesson.

c. MP II: Tutorial Setup: 0:05 (0:15)

*{**Instructor Notes:***

- *Follow the instructions on A1370-Atch1-1 to setup the computers.*
- *Follow the directions outlined in steps 1.1 through 1.10 in the AIRGAP Handbook (Ver1.0), "Starting a tutorial simulation" page.*
- *Instruct the students to carefully watch the on-screen introductory briefing, as it has important information that they need to know before beginning the tutorial. Also, instruct them to follow the instructions given in the tutorial. If they get ahead of the simulation, it will disrupt the tutorial. The tutorial is specifically designed to teach them in a set manner.}*

d. MP III: Tutorial Execution: 0:20 (0:35)

Instruct the students to press the start button to begin the tutorial. Wander among the students, answer any questions, and ensure no one gets ahead of the tutorial.

*{**Instructor Note:** If the students have trouble with the screen moving too fast when they move the mouse, have them press the F-10 key to pause the game. From the Game menu that is now displayed select Options, then select Speed. Change the mouse speed to the slowest setting.}*

e. MP IV: Q & A Session: 0:10 (0:45)

*{**Instructor Note:** This time period is primarily set aside to answer any questions the students may have after the tutorial is over - don't let it go on too long - many of their questions can be answered by reading the AIRGAP handbook Ver 3.5, or through hands on experience running the Flight versus CPU simulation. You can use A1370-A2-1 as a guide to ask questions of the students to see if they understand the concepts that were taught to them.}*

f. BREAK: 0:05 (0:50)

*{**Instructor Notes:** Use this time to set up for the Flight vs CPU simulation as outlined in steps 2.1 through 2.5 in The AIRGAP Handbook Ver 3.5, "Starting a flight versus computer simulation" page.}*

g. MP V: Flight vs CPU simulation: 1:00 (1:50)

Now you will get the opportunity to test out what you have learned so far against a computer opponent. You will work as a team to meet your mission objectives as outlined in the AIRGAP handbook Ver 3.5. If you have any questions during the simulation, please ask, and I will be happy to help out.

The forces you will be using in the AIRGAP campaign will flow into theater on a periodic basis.
Here is a copy of the Force Flow

***{Instructor Notes:** Hand 1 copy of Handout A1370-HO-1 to each team and 1 copy to the Joint Forces Commander}*

Three items must be met before forces will flow into the theater:

- A Force Flow time period must pass
- The Logistic commander needs to have construct and maintain the right number of logistic facilities at the main and Forward Operating Bases.
- The Logistic commander needs to have enough fuel currently available in the Combat Support Center to support the incoming assets.

Let's take a look at the Force Flow document and I will walk you through a couple of examples

- Look at the section entitled "Main Base - Force Flow intervals." At the beginning of the exercise, no logistic facilities or fuel is required to get the incoming assets.
- Look at the section entitled "Main Base - Force Flow intervals." At 1 hour 10 minutes or less left in the exercise you need to have 3 logistics facilities built, and have 800 units of fuel available in order for this Force Flow period's assets to arrive. When the criteria is met, the 800 units of fuel will be consumed as the assets flow into theater.
- Look at the section entitled "Each Forward Operating Base - Force Flow intervals." At the 45 minutes or less left in the exercise you need to have 4

logistic facilities built at each active FOB, and have 500 units of fuel for each FOB you have operating in order for the Force Flow for this period to arrive. If you have two FOB's operating, 1000 (500 * 2) units of fuel will be consumed.

Don't worry about strategy during this session, your objective is to become familiar with how you will conduct your role in concert with the your other team mates.

During this simulation, I would like the person operating the mouse to change out with another teammate every 15 minutes so everyone gets a chance to operate the simulation.

After this lesson is over you will need to determine what position each person will play within the AIRGAP campaign. You are not required to swap positions during the actual AIRGAP campaign if you do not wish to. The positions for each role are:

- Mouse Pilot - controls the units during the simulation
- Mouse Co-Pilot - assists the pilot in tracking information on screen, where units are, force flow coming in, etc.
- Recorder - documents examples of core competencies as they occur during the simulation, strategies attempted, etc.

If there are no last minute questions, lets get started.

*{**Instructor Notes:** Complete steps 2.6 through 2.8 in The AIRGAP Handbook Ver 3.5, 'Starting a flight versus computer simulation' page.}*

h. Conclusion: 0:10 (2:00)

1) //Summary//

You've had the opportunity to learn your role within the AIRGAP campaign and how to control your units within the AIRGAP wargame environment during the separate tutorials at the beginning of this lesson. The Joint Forces commander had the opportunity to overview all the positions and is hopefully already formulating a strategy for the upcoming AIRGAP campaign. You finally had a chance to work together to see how important it is to work together to meet the AIRGAP objectives.

2) //Remotivation//

Remember that you're doing more than just playing a game during the AIRGAP campaign - you have the opportunity here to expand your understanding of the Core Competencies in a non-threatening environment. Even though this is a fun activity, you need to take this opportunity seriously learn as much as you can. Do your learning now, in this non-threatening environment while lives and assets are not at stake.

3) //Closure//

It's now your turn to take the initiative and develop a strategy to use during the AIRGAP campaign to be conducted later in the course. Remember to focus on properly integrating the core competencies when you develop your strategy. You can use the flight room computers during your off duty time to practice your strategy against the computer, or against another flight if you wish. Good luck!

Main Base - Force Flow Intervals							
Simulation Time Left	**1:15**	**1:10**	**1:00**	**:50**	**:40**	**:30**	**:20**
Logistics Facilities Required	0	3	7	11	15	19	23
Fuel consumed by arriving assets	0	800	1100	1100	1150	1150	1500
LOG Assets							
Logistic Troops	8	-	2	-	2	-	2
C-130	-	2	-	-	1	-	-
ISR Assets							
AWACS	1	-	1	-	1	-	-
Globalhawk	1	-	-	1	-	-	-
Spec Ops	2	-	-	-	2	-	4
DCA Assets							
Logistic Troops	2	-	1	-	1	-	1
F-22	4	4	-	2	-	2	0
Mobile AAA	4	-	-	-	-	-	1
OCA Assets							
A-10	2	2	2	1	1	3	4
F-22	2	2	2	1	1	3	4
B-52	-	2	2	2	2	3	4

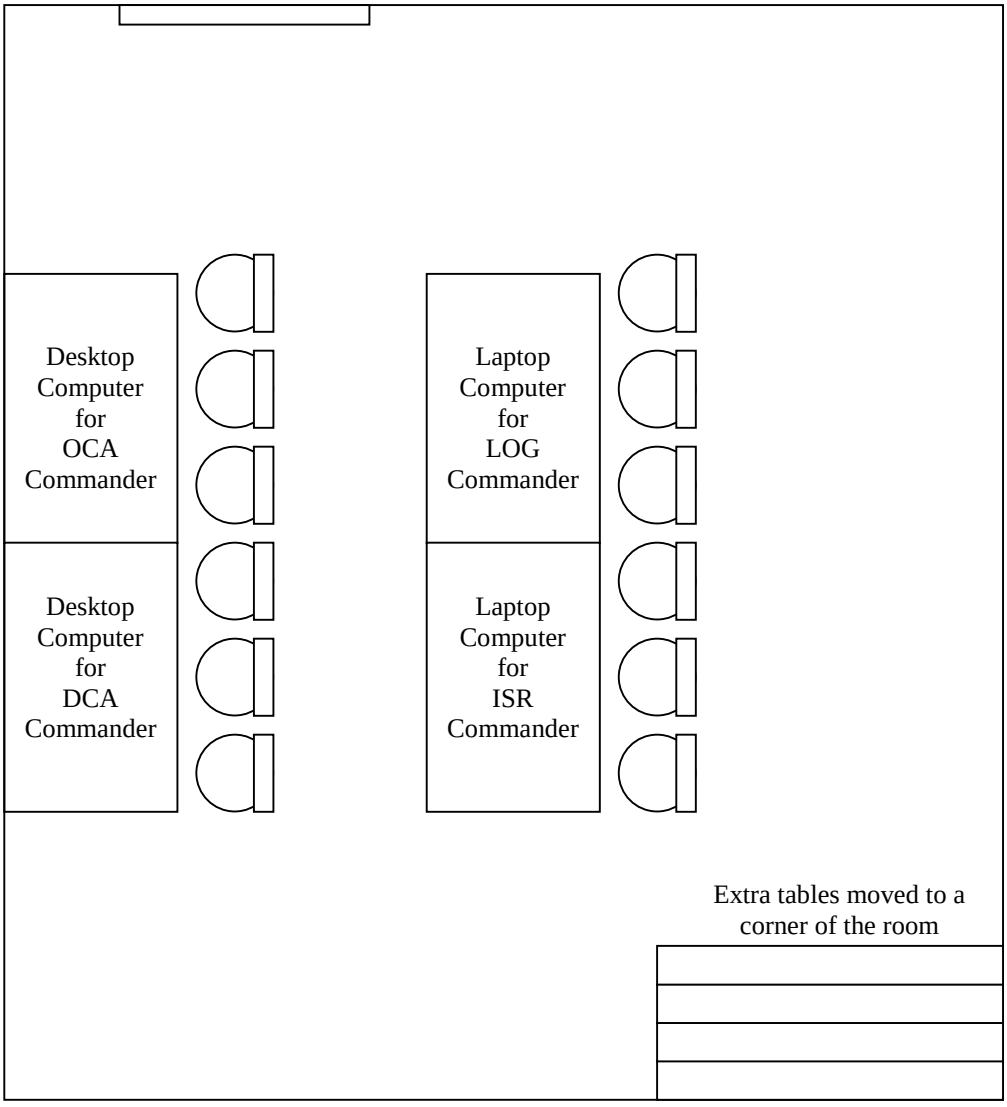
Each Forward Operating Base - Force Flow Intervals							
Simulation Time Left	**1:15**	**1:10**	**1:05**	**:55**	**:45**	**:35**	**:20**
Logistics Facilities Required	0	1	2	3	4	5	6
Fuel consumed by arriving assets	0	400	500	500	500	535	0
LOG Assets							
Logistic Troops	-	-	2	-	-	2	-
C-130	-	-	-	-	-	-	-
ISR Assets							
AWACS	-	-	-	-	-	-	1
Globalhawk	-	-	-	-	-	-	1
Spec Ops	-	-	-	-	-	-	3
DCA Assets							
Logistic Troops	-	-	1	-	-	1	-
F-22	-	-	2	-	2	-	2
Mobile AAA	-	-	2	-	-	-	1
OCA Assets							
A-10	-	-	1	1	1	1	3
F-22	-	-	1	1	1	2	6
B-52	-	-	-	-	-	-	3

Computer Setup

- Each flight will have two desktops and two laptops in each room. Prior to execution of the simulations, confirm that *StarCraft* (full version - not spawn or demo) is installed on each computer for which you are responsible. Contact your simulation representative if it is not installed.

- During Preweek, ensure the newest version of the AIRGAP maps are loaded on the machines. Please contact your simulation representative to find out what the most current versions are.

- Setup your room similar to the following diagram:



Tutorial Learning Objectives

The following explains the learning objectives for each AIRGAP tutorial. They are shown in the order that they are taught to the students.

Logistic Tutorial

- How to move the view on the display screen using the mouse or keyboard
- The color of the units that they can control
- How to transport fuel to the Combat Support Center
- How to build Logistic Facilities
- How to repair buildings and units
- How to transport Logistic Troops with the C-17
- How to move the C-17
- How to build a Forward Operating Base

ISR Tutorial

- How to move the view on the display screen using the mouse or keyboard
- The color of the units that they can control
- The stealth detecting capability of the AWACS
- How to move and set up patrols with the AWACS
- How to scan an area with the Satellite Scan
- How the AWACS, the Satellite Scan, and the Missile Defense are the only units that can see an enemy stealth asset
- How to 'Hot-Key' the Satellite Scan
- How to move the UAV
- The invulnerability of the UAV
- How to move and attack with the Special Tactics Troops

DCA Tutorial

- How to move the view on the display screen using the mouse or keyboard
- The color of the units that they can control
- How to build a new Missile Defense Battery
- How the Sector Operations Center controls all the Missile Defense Batteries in a particular quadrant.
- How to build a new Sector Operations Center
- How to move, patrol, and attack with the F-22
- How to defend a High Value Asset like the AWACS
- What the stealth mode is and how to see an enemy stealth asset

OCA Tutorial

- How to move the view on the display screen using the mouse or keyboard
- The color of the units that they can control
- How to move, patrol, and attack with the F-22
- How to conduct an area attack and a specific unit attack
- How to use the Right-Click method of controlling an asset
- How to launch a cruise missile from a B-52
- What the stealth mode is and how to see an enemy stealth asset